

L 4223-66

ACCESSION NR: AT5007945

Physical Equipment: N. A. Monoszon, B. V. Rozhdestvenskiy, K. M. Kozlov, A. M. Stolov, V. A. Titov, V. B. Zalmanson, Ye. A. Dmitriyev." Orig. art. has: 8 figures.

ASSOCIATION: Fizicheskiy institut imeni P. N. Lobedeva, AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 26May64

ENCL: 00

SUB CODE: NP.

NO REF SOV: 004

OTHER: 001

Card 3/3

L 4240-56 EWT(1)/EWT(m)/EPA(w)-2/EWA(m)-2/EWA(h) LJP(c) GS
 S/0000/64/000/000/1030/1035
 ACCESSION NR: AT5007974

AUTHOR: Kolomenskiy, A. A.; Lebedev, A. N.

TITLE: Self-excited resonant acceleration of particles by plane electromagnetic waves

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963.
 Trudy, Mosccw, Atomizdat, 1964, 1030-1035

TOPIC TAGS: high energy accelerator, electromagnetic wave, waveguide, transmission line

ABSTRACT: Existing methods for the acceleration of charged particles by traveling electromagnetic waves propose to utilize slow waves having a longitudinal component of the electromagnetic field, i. e. to apply loaded waveguides. High mechanical and radioengineering precision in accelerators that operate according to this principle makes, in the authors' opinion, the search for other methods interesting. This is especially important in the passage to very small wavelengths (say, in the visible range), where the technical difficulties connected with the creation of a waveguide system increase up to limits almost known. At the same time one can expect to obtain, namely in the given range, very large electric field strengths E by

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the methods of quantum radiophysics, and it would be important to attempt to utilize this field for purposes of particle acceleration. As shown in works by the authors (DAN 145, 1259 (1962); ZhETF 44, 261 1963)), there exists in principle the possibility of resonant movement in a free plane electromagnetic field, which is achieved by the imposition of a suitable magnetic field and by the selection of special initial conditions. Thus, for example, resonant movement can be actually realized for wave frequency 10^{15} hertz and magnetic field of the order of 10 to 100 kilogauss occupying a comparatively small volume. The possibility of the practical utilization of the considered mechanism depends in large degree upon progress in the field of obtaining large high-frequency power, in the field of creating superstrong magnetic fields, etc. The present report presents concrete examples, which will serve mainly for purposes of orientation, including the general case of a plane wave propagated with arbitrary phase velocity βc , which holds true in various media. It is shown that precise resonance in a certain sense is impossible for $\beta^2 \neq 1$. The possibility of self-excited resonant interaction is discussed, and shown to be based physically on two circumstances: (a) phase velocity of the wave equals c ; (b) the wave is purely transverse and is in no way connected with the assumption of field homogeneity in the transverse plane. Besides free space, the conditions (a) and (b) are also satisfied by ideal transmission lines (but not

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waveguides). Also discussed are the theoretical limitations connected with the presence of radiational effects in the case of movement along a spiral-shaped trajectory. "In conclusion the authors thank V. L. Ginzburg and I. M. Frank for discussion of the results, and also V. S. Voronin and G. I. Kharlamova for their assistance in the work." Orig. art. has: 3 figures, 26 formulas.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 26May64

ENCL: 00

SUB CODE: NP

NO REF SOV: 002

OTHER: 000

BVK
Card 3/3

11-11-11 RSP/ASD(a)-5/AFM/CSD/ASDC(a)/AFM/CSD/ASDC

11-11-11

11-11-11 11/11/11

AUTHORS: Voronin, V. S.; Kolomenskiy, A. A.

TITLE: Pressure of an intense plane wave on a free charge and on a charge in a magnetic field

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 4, 1964, 1528-1535

11-11-11: charged particle, interacting particle motion, radiation, particle wave interaction.

The authors obtain a complete solution of the problem of the motion of a charged particle moving in a uniform magnetic field and in a plane wave of a set of secondary particles. The authors also obtain the pressure of a plane wave of a set of secondary particles on a charged particle. The pressure of a plane wave of a set of secondary particles on a charged particle in a uniform magnetic field is also solved with the radiation

11-11-11

L 14830-65

ACCESSION NR: AP4047920

reaction force taken into account. General formulas are obtained for the radiation pressure on a free charge and on a charge moving in the magnetic field, of which the Thomson light formula is a special case. No restrictions are imposed on the intensity or wave-

1947. No restrictions and no export controls were placed on the sale of atomic energy information.

tion of waves, interaction of radio waves with particles in the
magnetic field or in interstellar magnetic fields, etc.).

1. The above is a copy of the original document, and is not a copy of a copy.

between a wave and a particle in a magnetic field brought
this radiation reaction into account. The art. was:
1935.

ORGANIZATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk

Card 2/3

L 14830-65

ACCESSION NR: AP4047920

SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 23Apr64

ENCL: 00

NP

NR REF SOV: 001

OTHER: 001

L 3407-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) DM

ACCESSION NR: AP5016935

UR/0089/65/018/006/0636/0638
621.384.61

AUTHOR: Kolomenskiy, A. A.

38
B

TITLE: On the loss of particles due to passage of nonlinear resonances
in accelerators and storage rings

SOURCE: Atomnaya energiya, v. 18, no. 6, 1965, 636-638

TOPIC TAGS: proton accelerator, storage device, particle collision,
proton resonance, nonlinear vibration

ABSTRACT: The author analyzes one of the possible particle-loss mechanisms that must be taken into account in the design and operation of large proton storage rings intended for colliding beam experiments. The effect of resonant combinations of radial and vertical betatron oscillation frequencies are analyzed, especially for the case when the point of nonlinear resonance shifts rapidly along the storage ring. The increase in the amplitude resulting from the fast passage of the nonlinear resonance is then calculated theoretically. The calculations

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show that even at relatively modest storage times, particles passing through the resonances are bound to be lost. To reduce these losses, the perturbing oscillations in the magnetic field must be reduced to a minimum, and the dependence of the frequency on the momentum must be decreased as much as possible. Orig. art. has: 9 formulas

ASSOCIATION: None

SUBMITTED: 13Jul64

ENCL: 00

SUB CODE: NP

NR REF SOV: 003

OTHER: 000

Card 2/2 *md*

L 5076-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) DM

ACCESSION NR: AP5022629

UR/0089/65/019/002/0126/0131
621.384.60

29
27
B

AUTHOR: Balbekov, V. I.; Kolomenskiy, A. A.

TITLE: Coherent instability of betatron oscillations in accelerators and particle collectors

SOURCE: Atomnaya energiya, v. 19, no. 2, 1965, 126-131

TOPIC TAGS: particle accelerator, particle beam

ABSTRACT: The purpose of this article is to present a theoretical analysis of coherent vertical oscillations initiated in the accelerator cycle. The causes provoking these oscillations and consequently a coherent instability were examined and the time needed for the development of these phenomena was evaluated. The problem of damping conditions was also considered. A dispersion equation was derived for coherent vertical oscillations with respect to the centre of gravity of accelerated particle beams. This disclosed that the finite

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ACCESSION NR: AP5022629

2
limited conductivity of chamber walls could lead to a hazardous instability. In conclusion, the maximum admissible number of injected particles was considered from the point of view of the coherent vertical stability. It is stated that for the proton synchrotron of the Dubna institute such number was about 10^{14} while for the synchrocyclotron of the Academy of Science Physics Institute this maximum number was about 10^{12} . Orig. art. has: 25 formulas

ASSOCIATION: None

SUBMITTED: 19Aug64

ENCL: 00

SUB CODE: NF

NO REF SOV: 006

OTHER: 002

Card 2/2 *md*

L 13824-66 EWT(m)/EWP(1) LJP(c) DM

ACC NR: AP6001798

SOURCE CODE: UR/0089/65/019/006/0534/0535

AUTHOR: Kolomenskiy, A.A.

ORG: none

TITLE: Oscillation decrements in accelerators in the presence of arbitrary energy losses 42
23

SOURCE: Atomnaya energiya, v. 19, no. 6, 1965, 534-535

TOPIC TAGS: particle accelerator, bremsstrahlung, charged particle, quantum oscillation

ABSTRACT: The author presents expressions for the calculation of betatron and synchrotron oscillation decrements in the presence of arbitrary energy losses. The equation of charged particle motion where the last term represents the braking force related to energy losses, is

$$\frac{d}{dt}(mv) = \frac{e}{c} [vB] + eE - \frac{P}{v^2} v,$$

used to derive equations which are applicable to particles of arbitrary energy and which provide estimates for the magnitude and sign of the friction forces. The equations are extended to the case of 1) ionization losses, generating oscillations when $\beta = v/c < 1/\sqrt{2}$ (ζ = sum of decrements)

$$P \approx \frac{1}{\beta}, \sigma \approx \frac{1}{2} \left\langle r \frac{2\beta^2 - 1}{\beta^2} \right\rangle.$$

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UDC: 621.384.6

L 13524-55

ACC NR: AP6001798

2) bremsstrahlung losses, causing oscillations when $\beta < 1/2$ $P \propto \beta E^2, \sigma \approx \frac{1}{2} \left\langle \Gamma \frac{4\beta^2 - 1}{\beta^2} \right\rangle$ 0

3) relativistic magnetobremsstrahlung ($\beta = 1$) $P \propto E^2, \sigma = \frac{3}{2} \langle \Gamma \rangle$.

Orig. art. has: 12 formulas.

SUB CODE: 20 / SUBM DATE: 25May65 / ORIG REF: 001

Card

2/2

L 27548-66 EWT(1)/EWT(m) IJP(c) GG

ACC NR: AF6014051

SOURCE CODE: UR/0056/66/050/004/1101/1106

AUTHOR: Kolomenskiy, A. A.; Lebedev, A. N.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskii institut Akademii nauk SSSR)

TITLE: Quasilinear acceleration of particles by a transverse electromagnetic wave

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 4, 1966, 1101-1106

TOPIC TAGS: particle acceleration, charged particle, electromagnetic interaction, laser application

ABSTRACT: The authors develop certain ideas presented in an earlier paper (ZhETF v. 44, 261, 1965) and propose a new mechanism for the acceleration of charged particles in the field of a plane electromagnetic wave. The mechanism consists of selecting a time-invariant magnetic field (synchronizing field) such that the particle is made to move in it along a trajectory in which the field does work on the particle and contributes to the acceleration. This mechanism obviates the need for the customary slow-wave structures used in conventional linear accelerators. Relations between the particle energy and the longitudinal coordinate are derived for both relativistic and nonrelativistic particles, and the requirements that must be satisfied by the synchronizing magnetic field are established. Advantages of the proposed system are the fact that a time-invariant magnetic field is relatively easy to build and its use

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L 27548-66

ACC NR: AP6014051

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permits particle injection to be effected during each cycle of the high-frequency field of the wave. This makes large particle-beam intensities possible in principle. There are grounds for assuming that the required intensities of microwave and light waves necessary for this purpose will be realized in the near future, making the method likewise realizable. The principle of the method itself lends itself to further refinement. Orig. art. has: 28 formulas. [02]

SUB CODE: 20/ SUBM DATE: 18Nov65/ ORIG REF: 001/ ATD PRESS: 4260

Card 2/2.

BLG

L 44266-66 EWT(1) IJP(c) AT

ACC NR: AP6020208 SOURCE CODE: UR/0056/66/050/006/1529/1536

AUTHOR: Balbekov, V. I.; Kolomenskiy, A. A.

87
85
B

ORG: none

TITLE: Stability of transverse oscillations of a focused charged beam in an absorbing medium

SOURCE: Zh eksper i teor fiz, v. 50, no. 6, 1966, 1529-1536

TOPIC TAGS: charged particle, ion beam focusing, betatron, plasma interaction, gas ionization, oscillation

ABSTRACT: The transverse stability of a focused beam of charged particles moving through an absorbing medium has been investigated. The various modes of coherent oscillations (center of gravity, size, and shape) have been determined and their frequencies and increments found. The possibility of stabilizing the beam by exploiting the energy and nonlinearity of the betatron oscillation has been analyzed.

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L 44266-66

ACC NR: AP6020208

The effect of the ^{2/}plasma produced as a result of ^{2/}gas ionization has been estimated. 2
These problems are of interest in developing and using accelerators and accumulators
with high beam intensity. Orig. art. has: 25 formulas. [Based on authors' abstract]
[NT]

SUB CODE: 20/ SUBM DATE: 06Nov65/ ORIG REF: 003/ OTH REF: 002/

Card 2/2 *fdh*

L 07060-67 EWT(m) IJP(c)

ACC NR: AP6021630

(N)

SOURCE CODE: UR/0089/66/020/003/0270/0271

AUTHOR: Balbekov, V. I.; Kolomenskiy, A. A.

ORG: none

TITLE: Influence of conductivity of the walls of an accelerating chamber or a storage ring on the oscillations of the dimensions and shape of the beam

SOURCE: Atomnaya energiya, v. 20, no. 3, 1966, 270-271

TOPIC TAGS: charged particle, particle accelerator, storage ring, electron beam, electric conductivity

ABSTRACT: The stability of an accelerated charged beam is analyzed in a chamber of rectangular cross section. By means of a method developed in an earlier paper (Atomnaya energiya v. 19, 126, 1965) it is shown that if the midplane of the beam coincides with the midplane of the chamber and the beam width is much larger than its thickness, the nonequilibrium charge density occurring under the influence of the beam's own field can be readily determined in terms of the charge, mass, and linear density of the particles and the parameters of the chamber. This makes it possible to obtain an equation for the longitudinal component of the electric field and the conditions under which instability sets in. The equations show that the higher-moment oscillations become significant if the beam thickness is comparable with the height of the chamber and their influence increases also on approaching nonlinear resonance. Consequently the higher-moment oscillations can become dangerous in strong focusing systems. The

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UDC: 621.384.60

L 07060-67

ACC NR: AP6021630

instability can be eliminated by producing energy scatter and nonlinearity in the oscillations, the same as in the case of the oscillations of the center of gravity of the beam. Orig. art. has: 4 formulas.

SUB CODE: 20/ SUBM DATE: 10Nov65/ ORIG REF: 002/ OTH REF: 001

Cord 2/2 LC

L 06995-67 EWT(m) IJP(c)	SOURCE CODE: UR/0089/66/020/006/0513/0514
ACC NR: AP6021528	
AUTHOR: <u>Kolomenskiy, A. A.; Kamunnikov, V. N.; Kazanskiy, L. N.; Ovchinnikov, Ye. P.; Papadichev, V. A.; Semenov, S. S.; Fateyev, A. P.; Yablokov, B. N.</u>	
ORG: none	19 38 35 B
TITLE: Starting of a new accelerator - symmetrical annular FM <u>synchrotron</u> of the Physics Institute im. P. N. Lebedev AN SSSR	
SOURCE: Atomnaya energiya, v. 20, no. 6, 1966, 513-514	
TOPIC TAGS: electron accelerator, synchrotron/ KF electron accelerator	
ABSTRACT: This is a brief report of the starting of a new experimental symmetrical annular FM synchrotron (KF installation). It is a strong-focusing accelerator with constant magnetic field, in which the time variation of the magnetic field is replaced by a radial increase of the field in accordance with the growth of the particle energy. The accelerator was proposed by one of the authors (Kolomenskiy, ZhETF v. 33, 298, 1957; Atomnaya energiya v. 3, 492, 1957) and its construction is described in detail elsewhere (V. N. Kamunnikov et al., in: Trudy Mezhdunarodnoy konferentsii po uskori-telyam, Dubna, 1963 [Transactions of International Conference on Accelerators, Dubna, 1963] Atomizdat, 1964, p. 653). The article describes briefly the magnet, the initial operation, the accelerating system, the electron injection, and some of the preliminary results. The authors thank <u>V. S. Voronin, D. D. Krasil'nikov, A. N. Lebedev, O. A. Smirnov, V. M. Gapanovich, N. V. Platonov, G. T. Ponomarev, V. A. Ryabov, Ye.</u>	
Card 1/2	UDC: 621.384.612.4

L 06995-67

ACC NR: AF6021528

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F. Troyanov, G. I. Kharlamova, L. N. Chekanova, and the technicians' and mechanics'
group for help with the starting of the accelerator, and Professor N. A. Dobrotin
for interest in the work. Orig. art. has: 2 figures.

SUB CODE: 18/ SUBM DATE: 31Mar66/ ORIG REF: 004/ OTH REF: 001

Card

2/2 JC

Card

1/2

UDC: 621.304.02

ACC NR: AP7005707

rectangular waveguide (72 x 44 mm) for the H_{10} mode or a 76-mm diameter round waveguide for the H_{11} mode. The length of the waveguide ranged from 150 to 1000 mm. Pulsed microwave power (not more than 600 kw) (3000 MHz) was fed in 3- μ sec pulses at a repetition frequency of 50 Hz. The 1000-oe dc field was produced with a solenoid. The particle energy was determined from the deceleration produced by aluminum foils and reached 700 kev, at an electric field intensity of 3—5 kv/cm, which is higher than obtainable by ordinary cyclotron acceleration. The ancillary tests made on the equipment are briefly described. The experimental data agree with the earlier theoretical predictions and it is concluded that the autoresonant mechanism can be used for effective injection of particles into magnetic traps. Orig. art. has: 1 figure and 9 formulas. [02]

SUB CODE: 20/ SUBM DATE: 05Sep66/ ORIG REF: 006/ ATD PRESS: 5117

Card 2/2

BYCHENKOV, Yuriy Dmitriyevich, mladshiy nauchnyy sotrudnik; SEREGIN, I.N..
Prinimali uchastiye: KOLOMENSKIY, A.P., inzh.; STOYAROV, M.P.,
inzh.; VILIN, M.G., inzh.; VALYUS, V.M., inzh.; BOCHMAN, G.P.,
tekhn. YERIN, B.G., red.; SMIRNOV, A.P., red.isd-va; DONSKAYA,
G.D., tekhn.red.

[Investigating the performance of stretching equipment and cone-
type anchorages] Issledovanie raboty natiashnogo oborudovaniia
i komusnykh ankerov, Moskva, Nauchno-tekhn.isd-vo M-va avtomo-
bil'nogo transp. i shosseinykh dorog RSFSR, 1959. 27 p.

(MIRA 13:4)

1. Nachal'nik laboratorii zhelezobetonnykh konstruktсий Gosudarstven-
nogo Vsesoyuznogo dorozhnogo nauchno-issledovatel'skogo instituta
(SOYUZZDORNI) (for Seregin).

(Prestressed concrete)

TAL', K.E., kand.tekhn.nauk; CHISTYAKOV, Ye.A., kand.tekhn.nauk;
KOLOMENSKIY, A.P., inzh.

Unit for testing flexible columns with protracted loading. Trudy
NII ZHB no.26:21-29 '62. (MIRA 15:7)
(Columns, Concrete--Testing)

ACC NR: AT6036522

SOURCE CODE: UR/0000/66/000/000/0100/0100

AUTHOR: Vilkrov, A. I.; Kolomenskiy, A. V.; Smirennyy, L. N.; Dudkin, V. Ye.;
Kovalev, Ye. Ye.; Kuznetsov, V. G.

ORG: none

TITLE: Principles of calculating shielding from cosmic radiation [Paper presented
at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966.]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 100

TOPIC TAGS: spacecraft shielding, radiation protection, solar flare, cosmic radiation
biologic effect, radiation shielding

ABSTRACT: The problem of shielding the cosmonaut from high-energy corpuscular radiations is formulated in the following manner: for given conditions (trajectory, flight duration, etc.), the main-shielding requirements must be determined (type and thickness of material, arrangement of shielding, etc.) in order to protect cosmonauts from irradiation in greater than permissible doses with minimum additional weight of the shielding. This article describes a paper in which: 1) Chief aspects of methods of calculating shielding were examined. 2) Mean tissue doses for monoenergetic

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ACC NR: AT6036522

proton fluxes, for proton spectra from solar flares and the Earth's radiation belts were calculated. 3) On the basis of these data sample shielding calculations for some spaceflight trajectories were made. 4) The question of the reliability of radiation protection of a spacecraft was discussed. 5) At the end of the paper the main principles of designing shielding for inhabited spacecraft were formulated. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06, 18, 22 / SUBM DATE: 00May66

Card 2/2

KOLOMENSKIY, K. A.

Subject : USSR/Mining AID P - 497
Card 1/2 Pub. 78 - 11/27
Author : Kolomenskiy, K. A.
Title : Experimental industrial testing of the inserted
NGV2-32 depth pump
Periodical : Neft. Khoz., v. 32, #6, 43-44, Ju 1954
Abstract : The author describes the installation of the NGV2-32
depth pump for experimental operation in an oil well
2500-3000 meters deep. The basic improvements in com-
parison with the old 32-mm NGN-32 pump are outlined
together with the same details in experimental instal-
lation and on test procedures. Satisfactory test results
were obtained with the pump operation in the well at a
depth of 2396 m. (7850 ft), with the pump stroke varying
from 1800 mm to 2400 mm (71" to 94") and at a speed of
7 strokes per minute. However, operation in extra deep
wells requires further investigation, particularly under
different geological and technical conditions.

KOLOMENSKIY, K. A.

. AID P - 1343

Subject : USSR/Engineering

Card 1/1 Pub 78 - 6/30

Author : Kolomenskiy, K. A.

Title : Effective use of depth pumps and the increase
of their period of service

Periodical : Neft. khoz., v.32, #12, 17-19, D 1954

Abstract : The author presents statistical data on the
period of operation of depth pumps between re-
pairs and an analysis of the causes for interrup-
tion of the pump work as related to the quality of
the pump as well as to the geological conditions of
the well.

Institution: None

Submitted : No date

KOLOMENSKIY, L.V., inzh.

Astatic stepped regulation of the boiler temperature.

Khol.tekh. 39 no.6:36-37 M-D '62.

(MIRA 15:12)

(Refrigerators)

(Automatic control)

KOLOMENSKIY, N. V.

Kolomenskiy, N. V. "The role of man in eroding mountain rock", Trudy Laboratorii gidrogeol. problem im. akad. Savarenskogo (Akad. nauk SSSR. Otd-niye geol.-geogr. nauk), Vol. III, 1948, p. 356-60, - Biblog: 14 items.

SO: U-2888, 12 Feb. 53, (Letopis' Zhurnal 'nykh Statey, No. 2, 1949).

KOLCHENSKIY, Nikolay Vasil'yevich

N/5
623.85
.K8

INZHENERNAYA GEOLOGIYA (ENGINEERING GEOLOGY) MOSKVA, GOSGEOLTEKHIZDAT,
1951-v. ILLUS., DIAGRS., GRAPHS, MAPS, TABLES. LIB. HAS: v. 2

1. KOLOMENSKIY, N. V.
2. USSR (600)
4. Geology and Geography
7. Engineering Geological Research for Hydroenergy Construction, I. V. Popov, editor. (Moscow, State Geological Press, 1950). Reviewed by N. V. Koloemnskiy, Sov. Kniga, No. 4, 1951.

9. FDD Report U-3081, 16 Jan. 1953, Unclassified.

KOLOMENSKIY, N.V.

[Methodological instructions for the study of the weathering processes of rocks for engineering and geological purposes] Metodicheskie ukazaniia po izucheniiu protsessov vyvetrivaniiia gornnykh porod dlia inzhenerno-geologicheskikh tselei. Moskva, Gos.izd-vo geol.lit-ry, 1952. 66 p.

(MLRA 6:7)

(Erosion)

KOLOMENSKIY, N. V.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
Kolomenskiy, N. V.	"Engineering Geology"	Moscow Geological Prospecting Institute Imeni S. Ordzhonikidze

80: W-30604, 7 July 1954

KOLOMENSKIY, N.V.

Applicability of petrographic research methods in describing physical
and technical properties of rocks. Trudy MGRI no.26:95-100 '54.
(Rocks--Analysis) (Petrology) (MIRA 8:12)

KOLOMENSKIY, N.V.; KOMAROV, I.S.; IVANOVA, I.N.

The influence of glauconite on the physical and industrial
properties of rocks. Trudy MGRI no.28:113-130 '55.
(Glauconite) (MLRA 8:6)

KOLOMENSKIY, Nikolay Vasil'yevich; CHAPOVSKIY, Ye.G., redaktor;
GODOVIKOVA, L.A., redaktor izdatel'stva; CHAPOVSKIY, Ye.V.
tekhnicheskii redaktor

[Engineering geology] Inzhenernaia geologiya. Moskva, Gos. nauchno-
tekhn. izd-vo lit-ry po geol. i okhrane neдр. Pt.2. 1956. 319 p.
(Geology) (MIRA 9:7)

KOLOMENSKIY, N.V.

Some problems in the engineering geological sampling of rocks.

Razved.i okhr.nedr 22 no.5:43-48 My '56.

(MLRA 9:9)

(Boring) (Rocks)

KOLOMENSKIY, N.V.; DROZDOV, S.V.

Analysis of the deformation of structures in engineering geological research. Rasved. i okh.nedr. 22 no.11:48-53 N '56. (MLRA 10:1)

1. Meskovskiy Geologorazvedochnyy institut.
(Engineering geology) (Deformations (Mechanics)) (Earth movements)

KOLOMENSKIY, N.V.; DROZDOV, S.V.

Observations on the rate of weathering of argillaceous rocks for
purposes of engineering geology. Trudy MGRI 29:179-184 '56.
(Clay) (Weathering) (MLRA 10:4)

KOLOMENSKIY, N.V.

Principal aspects of testing rocks as it relates to engineering
geology. Trudy MGRI 29:160-168 '56. (MLRA 10:4)
(Rocks--Testing) (Engineering Geology)

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10, 15-57-10-14679
pp 217-218 (USSR)

AUTHOR: Kolomenskiy, N.V.

TITLE: Modern Methods of Ascertaining Generalized and Computed
Indexes of the Physical and Technical Properties of Rocks
(Sovremennyye metody ustanovleniya obobshchennykh i raschetnykh
pokazateley fiziko-tekhnicheskikh svoystv porod)

PERIODICAL: Sov. geologiya, Sb. 56, 1956, pp 40-51

ABSTRACT: Four groups of basic methods for selecting computed indexes may be distinguished. 1. There is the method of analogy with engineering geology, including the transfer of existing experience in construction to the investigating objective. This method is unique, in that the indexes are selected on the basis of all the manifest properties of the rocks. 2. The simpler statistical methods are nothing but the selection of more favorable index values after rejecting some of

Card 1/3

Modern Methods of Ascertaining Generalized (Cont.)

the extreme values, or they consist of selecting other statistical characteristics (average minimum, weighted, etc.) These methods have not been founded on theory, and are simply practical applications. 3. The method of interdependence is based on an assumed close connection between indirect and direct rock indexes. 4. The method of probable limits (the method of ascertained values) is based on the calculated mathematical statistics of average index values and on introduced corrections, which consider the possibility of deviation from average values calculated from an infinite number of determinations. The enumerated methods of selecting computed indexes contain a number of successful applications, but they also possess fundamental inadequacies, namely: a) the absence of indications for the necessity of using all the complex methods of geological investigation, and also the failure to analyze the nature of rock properties; b) the absence of proof in applicability of the methods of mathematical statistics to determine physical and technical rock properties; and c) the application of the methods of mathematical statistics with insufficient analysis of experimental data (whether there is

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15-57-10-14679

Modern Methods of Ascertaining Generalized (Cont.)

uniformity in their degree of precision, etc.). The department of engineering geology at the Moscow Geological-Prospecting Institute and workers from the Institute for Hydroelectric Design have jointly worked out a method for selecting computed indexes which takes into consideration accumulated data and investigations based on full use of complex geological methods, an analysis of the natural properties of rocks, and the application of statistics. The application of methods of mathematical statistics to rocks, as the objects of investigation, has been demonstrated in a number of experiments, from which it is seen that within the limits of selected bodies (engineering of geology elements), rocks are qualitatively similar and their physical and technical properties, as a rule, do not change with size. Considerable difficulty is experienced at present in subdividing formations according to engineering geological elements. For further development of the proposed methods of selecting computed indexes, it is necessary to establish criteria for such computations, and also to solve a number of less important problems.

Card 3/3

A. M. Baranovskiy

3(5)

SOV/132-59-7-11/17

AUTHOR: Kolomenskiy, N.V.

TITLE: Basic Problems of Geomorphological Surveys in the
Engineering-Geological Evaluation of a Region

PERIODICAL: Razvedka i okhrana nedr, 1959, Nr 7, pp 43-49 (USSR)

ABSTRACT: The correlation of geomorphological problems with the evaluation of engineering-geological conditions of a given area, scheduled for erection of various constructions, has not been dealt with sufficiently up to now. The importance of this correlation was underestimated also by Ya.S. Edel'shteyn in the latter's book "Principles of Geomorphology". According to the author, the engineering-geological evaluation of an area must not only include the study of geomorphological features of a given area but also the analysis of all endo- and exogenous processes. The type of the construction to be erected in that area must also be taken into consideration. The author proposes that the following basic problems of the geomorphological survey be con-

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Basic Problems of Geomorphological Surveys in the Engineering-
Geological Evaluation of a Region

sidered in the engineering geological evaluation.

1) - Determining the occurrence of all physico-geological phenomena (slides, caves, etc) which must be taken into account before planning and erecting the constructions; for instance the plans of erection of the Cheboksary dam on the Volga river had been changed because of landslide danger. In another case, walls of the main building of a Sochi sanatorium cracked because the builders did not pay enough attention to the results of the geomorphological survey, and constructed the building partly on solid basic rock and partly on sliding ground. Twenty-four years later the walls of the building cracked, because the sliding ground subsided. 2) - Determining the conditions of occurrence, composition and the degree of homogeneity of rocks. On these conditions depend the distribution, the structure of buildings and the conditions of their construction and exploitation. This is, according to the author, very important to the erection of dams and

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Geological Evaluation of a Region

bridges. The survey of a river valley must be especially carefully made. The tendency of constructors is to build dams and bridges in narrower parts of the valley because of lesser cost. But in some cases the narrowness involves too much auxiliary earth work (as in case of the Cheboksary dam) or causes the formation of alluvial gravel beds, as in case of the construction of the Akstafa river dam (Gruzinskaya SSR), where V.A. Prik-lonskiy refused to accept the proposed plan of construction of the dam at the indicated spot, fearing an excessive water infiltration through the gravel bed. Inadmissible deformations of bridges, discovered when the second track of the Moscow-Donbass railway was laid, were caused by a faulty survey of river bottoms; some of the pillars supporting the deformed bridges were placed on hard alluvial rocks and some - on unstable slimy-argillaceous sedimentary beds which fill the ancient depressions and cavities of river bottoms. 3) - Determining the exact volume and character of exploratory

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Basic Problems of Geomorphological Surveys in the Engineering-
Geological Evaluation of a Region

works. It is very important to pay attention to all features of the surveyed area. In one case, the geologist, who was fixing the places for exploratory drilling, did not pay attention to numerous small rivulets and fixed the bore-holes to be drilled between these rivulets. The core sampling showed a homogenous bed of solid rock. Only when the excavation work started was it found that these rivulets had a well defined valley filled with unstable alluvial rocks up to 6 m thick (Figure 3). The whole project had to be revised and the volume of earth works considerably increased. 4) - Preliminary specification of the character and volume of laboratory research. This research must be done to determine the specific features of different sedimentary rocks of a given area. The whole complex of analyses and experiments must be more or less fixed in advance. There are 3 diagrams and 1 Soviet reference.

ASSOCIATION: MGRI
Card 4/4

KOLOMENSKIY, N.V.; KOMAROV, I.S.

Lenin's ideas on the electrification of the country and problems of engineering geology related to hydrotechnical power constructions. Izv.vys.ucheb.zav.; geol. i razv. 3 no.5:3-10 My '60. (MIRA 13:11)

1. Moskovskiy geologorazvedochnyy institut imeni S.Ordzhonikidze.
(Lenin, Vladimir Il'ich, 1870-1924) (Electrification)
(Engineering geology)

GOLOV, A.Ye.; KOLOMENSKIY, N.V.; FOMIN, V.M.

Results of the conference of the member nations of the Economic
Aid Council on mapping for engineering geology purposes. Sov.geol.
4 no.5:151-153 My '61. (MIRA 14:6)

1. Ministerstvo geologii i okhrany nedr SSSR.
(Engineering geology—Maps)

KOLOMENSKIY, N.V.; CHAPOVSKIY, Ye.G.

Main problems of engineering geology. Razved. i okh. nedr 27
no.12:42-46 D '61. (MIRA 15:3)

1. Moskovskiy geologorazvedochnyy institut (for kolomenskiy).
2. Vsesoyuznyy gidrogeologicheskii trest (for Chapovskiy).
(Engineering geology)

KOLOMENSKIY, N.V.; FOMIN, V.M.

Basic principles of mapping methods from the point of view of
engineering geology. Razved. i okh. nedr 27 no.2:56-59 F '61.
(MIRA 14:5)

1. Moskovskiy geolograzvedochnyy institut (for Kolomenskiy).
2. Ministerstvo geologii i okhrany nedr SSSR.
(Engineering geology--Maps)

KOTLOV, F.V., kand. geol.-min. nauk, otv. red.; BEZRUK, V.M., doktor geol.-miner. nauk, red.; BELYY, L.D., doktor geol.-miner. nauk, red.; BYKOVA, V.S., kand. geol.-miner. nauk, red.; GOR'KOVA, I.M., doktor geol.-miner. nauk, red.; GUREYEV, A.M., red.; YEMEL'YANOVA, Ye.P., kand. geol.-miner. nauk, red.; KOLOMENSKIY, N.V., doktor geol.-miner. nauk, prof., red.; MAKEYEV, Z.A., doktor geol.-miner. nauk, red.; POL'SHIN, D.Ye., kand. tekhn. nauk, red.; POPOV, I.V., doktor geol.-miner.-nauk, prof., red.; PRIKLONSKIY, V.A., prof., red. [deceased]; RUBINSHTEYN, A.L., doktor geol.-miner. nauk, prof., red.; SERGEYEV, Ye.M., doktor geol.-miner. nauk, prof., red.; FADEYEV, P.I., kand. geol.-miner. nauk, red.; ZOLOTOV, P.F., red. izd-va; ASTAF'YEVA, G.A., tekhn. red.

[Materials on the engineering and geological properties of rocks and methods for their study] **Inzhenerno-geologicheskie svoistva gornykh porod i metody ikh izucheniia**; materialy. Moskva, Izd-vo Akad. nauk SSSR, 1962. 362 p. (MIRA 15:5)

1. Soveshchaniye po inzhenerno-geologicheskim svoistvam gornykh porod i metodam ikh izucheniya, Moscow, 1957. 2. Chlen-korrespondent Akademii nauk SSSR (for Priklonskiy). 3. Moskovskiy gosudarstvennyy universitet (for Sergeyev). 4. Laboratoriya gidrogeologicheskikh problem Akademii nauk SSSR (for Kotlov). 5. Kafedra "Osnovaniya i fundamente" Moskovskogo instituta inzhenerov vodnogo khozyaystva (Rubinshteyn).

(Rocks)

(Engineering geology)

GOLOV, A.Ye.; KOLOMENSKIY, N.V.; SHIRNOV, L.N.

[Problems of the unification of research from the viewpoint of engineering geology; materials accepted as typical by the Second Conference of the Administrators of Geological Bodies, members of the mutual Economic Assistance Council]
Voprosy unifikatsii inzhenerno-geologicheskikh issledovaniy; materialy, prinyaty v kachestve tipovykh Vtorym soveshchaniem rukovoditelei geologicheskikh organov - chlenov SEV. Moskva, Izd-vo "Nedra," 1964. 42 p. (MIRA 17:4)

KOLOMENSKIY, N.V.; KOMAROV, I.S.; Prinimali uchastiye: IVANOVA,
I.N.; DROZODV, S.V.; ZAKHAROVA, N.A., red.

[Engineering geology] Inzhenernaia geologiya. IArosavl',
Vysshaia shkola, 1964. 480 p. (MIRA 17:6)

KOLOMENSKIY, N.V.; DUBROVKIN, V.L. [deceased]; KOMAROV, I.S.

Principles of state mapping from the viewpoint of engineering
geology. Sov. geol. 7 no.3:76-80 Mr '64.

(MIRA 17:10)

1. Moskovskiy geologorazvedochnyy institut im. S. Ordzhonikidze.

KOLONENSKIY, N.V.

Basic principles of methods of engineering geology surveying on a scale of 1:2000. Izv. vys. ucheb. zav.; geol i razv. 7 no.10:89-96 0 '64. (MIRA 18:7)

1 Moskovskiy geologorazvedochnyy institut im. S.Ordzhonikidze.

KOLOMENSKIY, N.V.

Concerning basic assumptions in engineering-geology mapping.
Razved. i okh. neдр 30 no.4:40-48 Ap '64.

(MIRA 17:12)

1. Moskovskiy geologorazvedcomnyy institut imeni Sergo Ordzhonikidze.

KOLOMENSKIY, V.D.; YUDIN, I.A.

Mineral composition of the skin of the Sikhote-Alin meteorite
and of the meteorite and meteor dust. Meteoritika no.16:59-66
'58. (MIRA 11:8)

(Sikhote-Alin Range--Meteorites)

This collection contains 23 abstracts and reports of papers presented at the Seventh Conference on Meteorites organized by the Committee on Meteorities, Acad. Sci. USSR, held in Moscow, Nov. 14-16, 1956. The reports and articles deal with the origin and composition of meteorites and their relation to other elements of the solar system, the properties of stone meteorites, meteorite craters on the earth and the moon, and specific meteorites such as those which fell in the Ukraine and in Mongolia. Several reports are devoted to the Sikhote-Alin' meteoric shower, its trajectory, chemical and mineral composition, structure, and the circumstances attending its fall.

KOLOMENSKIY, V.D.

Results of X-ray analysis of the Nikol'skoe stone meteorite.
Meteoritika no.18:155-161 '60. (MIRA 13:5)
(Moscow Province--Meteorites--Analysis)

This collection of 26 articles on problems in meteoritics includes the Transactions of the Eighth Meteoritic Conference which took place in Moscow, June 3-5 1958. An introductory article reviews recent progress in the field, particularly in the matter of determining the age of meteorites. Individual articles discuss the fall, physical and chemical properties, and age of meteorites. The danger presented by meteors to artificial earth satellites is discussed. References accompany individual articles.

KOLOMENSKIY, V.D.

Roentgenometric investigation of the fusion crust of the Kunashak
stone meteorite. Meteoritika no.19:86-99 '60. (MIRA 13:11)
(Kunashak region--Meteorites)
(X-ray crystallography)

GRIGOR'YEV, D.P.; KOLOMENSKIY, V.D.; KUZNETSOVA, V.G.

Compilation of a mineralogy of meteorites. Meteoritika no.20:172-
177 '61. (MIRA 14:5)

(Meteorites)

S/035/61/000/012/034/043
A001/A101

AUTHOR: Kolomenskiy, V.D.

TITLE: X-ray examination of the fusion crust of the Kunashak stone meteorite

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no.12, 1961, 80, abstract 12A648 (V sb. "Meteoritika", no. 19, Moscow, 1960, 86 - 99)

TEXT: Information is given on detailed X-ray examination of three samples from the fusion crust of the Kunashak meteorite. Magnetic fraction, consisting of nickel iron, oxymagnetite and josite, was separated from the samples. Magnetic fraction amounted to ~0.5% of the total quantity of the powder. Debye powder patterns were taken in chambers of 63 mm in diameter. An ionic X-ray tube with an iron anode served as a source of beams ($\lambda_{\alpha} = 1.934$ kX; $\lambda_{\beta} = 1.753$ kX), operating at a voltage of 35 kv and a current of 8 ma. Exposure lasted 2 hours. Distances between symmetric lines of the patterns were measured with a half-millimeter rule. Line intensity was estimated by the 10-mark scale. Corrections for absorption were introduced with reference to sodium chloride ($a = 5.6285$ kX) using a special pattern of the mixture of the investigated substance with 20% sodium.

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X-ray examination ...

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chloride. Deciphering of the fusion crust of the Kunashak meteorite has shown that olivine was the main mineral. The olivine composition, size of its elementary cell and specific gravity were determined. In the first sample the olivine composition is described by the formula: $(\text{Mg}_{0.80}\text{Fe}^{0.20})_2\text{SiO}_4$, in the second sample - $(\text{Mg}_{0.66}\text{Fe}^{0.33})_2\text{SiO}_4$. The size of olivine elementary cell are: $a = 4.75 \pm 0.01$ kX; $b = 10.34 \pm 0.02$ kX; $c = 5.99 \pm 0.01$ kX; specific gravity was 3.5 (in the first sample); $a = 4.79 \pm 0.02$ kX; $b = 10.39 \pm 0.02$ kX; $c = 6.01 \pm 0.01$ kX; specific gravity was 3.6 (in the second sample). Enstatite is contained in a lesser quantity. Its formula was $(\text{Mg}_{0.99}\text{Fe}^{0.01})\text{SiO}_3$; specific gravity - 3.15 - 3.20. Oxymagnetite and kamacite are contained in still lesser quantities. The formula of oxymagnetite was determined to be $(\text{Fe}^{0.90}\text{Fe}^{0.07})\text{Fe}_2\text{O}_4$; average size of cell edge $a = 8.388$ kX, which is somewhat less than in magnetite of normal composition $\text{Fe}^{0.90}\text{Fe}^{0.07}\text{Fe}_2\text{O}_4$, whose $a = 8.386$ kX. The average value of the edge of kamacite elementary cell in the Kunashak meteorite fusion crust $a = 2.869$ kX (in the second sample). It corresponds to nickel content of at least 6 atomic per cent. Parameter increase is obviously connected with increasing nickel content. With the purpose of a more complete investigation of the Kunashak meteorite

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X-ray examination ...

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A001/A101

fusion crust and also determination of small impurities, V.V. Khokhlov carried out the semi-quantitative spectral analysis of one sample. The results are presented. There are 24 references.

O. Kirova

[Abstracter's note: Complete translation]

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Card 3/3

GRIGORYEV, D.P., KOLOMENSKIY, V.D., KUZNETSOVA, V.G.

Concerning compilation of the minerology of meteorites.

40

"METEORITKA" (Meteorites-Studies) Issue no. 20 - 1961, sponsored by the
"Committee on Meteorites" of the Soviet Academy of Sciences - Moscow - 1961,
208 pages, and containing Collected Works ("Trudy") of the "9th Meteorite Conference"
Organized by the Committee on Meteorites of the Soviet Academy of Sciences and
Held in KIEV on 2-4 June 1960.

KOLOMENSKIY, V.D.; MIKHEYEVA, I.V.

Hyperstene and olivine of the Iurtuk meteorite. Meteoritika no.23:
62-71 '63. (MIRA 16:9)

(Meteorites)

MIKHEYEVA, I.V.; KOLOMENSKIY, V.D.

Röntgenometric study of meteor and industrial dust. Meteoritika
no.25:156-162 '64. (MIRA 17:9)

L 14350-68

EWI(1)/EWG(v)/EWA(d)/REC-1(1)

Nikheyeva, I. V.; Kolomeyskiy, I. V.

1964/0156/0162

Investigation of meteoric and industrial dust by the x-ray

SOURCE: AN SSSR. Komitet po meteoritam. Meteoritika, no. 25, 1964, 156-162

TOPIC TAGS: meteoric dust, industrial air pollutant, meteorite, meteoric dust roentgenogram

ABSTRACT: Samples of meteoric dust from the USSR and industrial dust from the USSR were subjected to detailed x-ray analysis. (Following to the material under analysis (1.5 mg in the case of Chukotskiy dust), special preparations in the form of columns 0.5 mm wide were made and so-called "rubber pellets" prepared. The pellets were then photographed with an ordinary Debye powder camera. Exposure time was 2.5--3 hr on a URS-55 apparatus (voltage, 45 kv; current on the x-ray iron tube, 14 amp).

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ACCESSION NR: AT4047025

From the samples, good quality x-ray fluorescence were obtained. The basic component of the fusion crust of the Sikhote-Alinsk meteorite and the meteoric dust is magnetite. The composition of the meteoric dust is $0.77\text{Fe} \cdot 2.15\text{O}_4$ is the product of the fusion of the magnetite in comparison with the composition of the meteoric and industrial dust is $0.77\text{Fe} \cdot 2.15\text{O}_4$. However, in the oxymagnetite of the industrial dust the process of oxidation of the bivalent by the trivalent iron goes somewhat further. Since the difference in the parameters of oxymagnetites is close to the limits of accuracy of the measurements, further investigations will be necessary.

SUBMITTED: 00

ENCL: 00

SUB CODE: AA

NO REF SOV: 017

OTHER: 000

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KOLOMENSKIY, V.M. [Kolomens'kiy, V.M.], assistant

Changes in the cardiovascular system in tuberculous meningitis
in children. Ped., akush. i gin. 22 no.5:12-17 '60. (MIRA 15:6)

1. Kafedra fakul'tetsko-gospital'noy pediatrii (zav. - chlen-
korrespondent AMN SSSR prof. V.O. Belousov) Khar'kovskogo
meditsinskogo instituta (direktor dotsent B.A. Zadorozhnyi)
na baze oblastnoy klinicheskoy bol'nitsy (glavnyy vrach -
V.A. Pizhankova).

(MENINGES--TUBERCULOSIS)
(CARDIOVASCULAR SYSTEM)

KOLOMENSKIY, V.N.

Some problems in the typology of dwellings under conditions existing
in the Golodnaya Steppe. Sbor.nauch.trud.TashNIIS no.5:34-45 '63.
(MIRA 18:1)

KOLCHENSKIY, V.N., assistant

Capillaroscopic observations in children in various forms
of primary tuberculosis. Trudy Khar. med. inst. no.50:28-
40 '62. (MIRA 19:1)

1. Kafedra fakul'tatsko-gospital'noy pediatrii (zav. - chlen-
korrespondent AMN SSSR prof. Belousov, V.A.) Khar'kovskogo
meditsinskogo instituta.

KAZARINOV, Yu.M.; KOLOMENSKIY, Yu.A., assistant; SMIRNOV, R.I., nauchnyy
sotrudnik

Effect of fluctuation noises on the precision of auto-tracking
systems having astaticism of first order and a pass band controlled
by input signals. Izv. vys. ucheb.zav.; prib. no.2:3-12 '58.
(MIRA 11:7)

Leningradskiy elektrotekhnicheskoy institut im. V.I. Ul'yanova
(Lenina).

(Remote control--Noise)

KOLOMENSKIY, Yu.A.

Differentiating the envelope of a bell-shaped radio pulse in the presence of noise. Izv.vys. ucheb. zav.; radiotekh. no.2:178-186
Mr-Apr '58. (MIRA 11:5)

1. Rekomendovana kafedroy radiopriborov Leningradskogo elektrotekhnicheskogo instituta im. V.I. Ul'yanova (Lenina).
(Information theory)

9(2)

AUTHORS:

Kazarinov, Yu.M., Kolomenskiy, Yu.A., and Petrov, Yu.V. SOV/142-2-1-17/22

TITLE:

A Square-Law Detector Circuit With a Wide Range of Working Amplitudes (Ob odnoy skheme kvadratichnogo detektora s shirokim diapazonom rabochikh amplitud)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy - radiotekhnika, 1959, Vol 2, Nr 1, pp 112-114 (USSR)

ABSTRACT:

Networks with a square amplitude characteristic are used in different engineering fields. In many cases the square characteristic must be maintained over a wide range of input voltages. This is important, for example, for preventing the suppression of the signal by noise. The principal obstacle in designing square-law detectors is caused by the fact that there are no diodes with a square characteristic in a wide range of working amplitudes. When checking silicon diodes DK-S and DK-V, it was found that their amplitude characteristics have square sections, not exceeding 0.1 volt. In connec-

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APPROVED FOR RELEASE: 09/18/2001 a CIA-RDP86-00513R000823920001-6
Amplitudes

tion with this investigation, a square-law detector was developed with a multi-electrode tube, based on the principle of voltage multiplication. Figure 1 shows the circuit diagram of this detector with a 6A7 or 6A2P tube. The circuit diagram also shows the last stage of an IF amplifier with one 6Zh4 tube, from which the signal and noise voltage is fed to the 1st and 3rd grids of the detector tube. The authors present the experimental investigation results of this square-law detector in two graphs. They show that the suggested detector circuit has an extended square characteristic and may be used for detecting signals with amplitudes changing in wide ranges. There are 1 circuit diagram, 2 graphs and 1 Soviet reference.

~~Card 2/3~~

Chair of Radio Devices, Leningrad Inst. of Electrical Engineering in mem. V. I. Ul'yanov-Lenin

06534

SOV/142-2-2-10/25

9(2,3)
AUTHORS:

Kazarinov, Yu.A., and Kolomenskiy, Yu.M.

TITLE:

The Analysis of Noiseproof Features of Some Time Discriminator Types

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1959, Vo' 2, Nr 2, pp 205-216 (USSR)

ABSTRACT:

The authors present in this paper the analysis of noiseproof features of four time discriminator types for bell-shaped pulses taking into account the transmission function of the circuit before the discriminator. It is possible to conduct a comparative evaluation of the noiseproof features of the circuits to be investigated and to find corresponding optimum pass bandwidths. The analysis is conducted under the assumption that the transmission function of the HF circuit and the IF frequency may be approximated by a bell-shaped function. Further it is assumed that the discriminator is inertialess. For each of the discriminator types optimum, from the view-point of the lowest rms, errors and the threshold signal-to-noise

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S9V/142-2-3-3/27

9(2,3)

AUTHOR: Kolomenskiy, Yu.A.

TITLE: The Calculation of the Time Constant and the Transmission Factor of Some Types of Time Discriminators

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1959, Vol 2, Nr 3, pp 283-291 (USSR)

ABSTRACT: The author describes the principle of functioning of time discriminators with one and with two reservoir capacitors. He presents formulas for calculating the time constant and the transmission factor. In the papers by B.N. Mityashev, (Ref.1), Yu.M. Kazarinov, Yu.A. Kolomenskiy, S.V. Tolokonnikov, (Ref.2) and Yu.M. Kazarinov, Yu.A. Kolomenskiy, R.I. Smirnov, (Ref.3), analyses are made of the effect of pulse signals and noise on the discriminators under consideration. However, the aforementioned papers do not contain calculations of the time constant and the transmission factor of time discriminators. Further, the influence of circuit elements on these parameters was not analyzed. In this paper, the author attempts to fill this gap at least for the most frequently used time discriminator types with a linear "key" and

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The Calculation of the Time Constant and the Transmission Factor of Some Types of Time Discriminators

one or two reservoir capacitors. Circuits with a nonlinear "key" were not considered in this paper since they are less noise-resistant. Fig.1 and fig.5 show diagrams of equivalent circuits with two and one reservoir capacitor. The publication of this article was recommended by the Kafedra radiopriborov Leningradskogo elektrotekhnicheskogo instituta imeni V.I. Ul'yanova (Lenina) (Leningrad Electrical Engineering Institute imeni V.I. Ul'yanova (Lenin)). There are 2 circuit diagrams, 3 graphs and 3 Soviet references.

SUBMITTED: December 22, 1958 (October 10, 1958)

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S/142/60/003/002/003/021
E192/E382

AUTHORS: Kazarinov, Yu. and Kolomenskiy, Yu. A.

TITLE: Accuracy of the Automatic Determination of the
Coordinates by an All-round Scanning System

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika,
1960, Vol. 3, No. 2, pp 168 - 176

TEXT: The error in determining the coordinates by means of all-
round scanning radar²⁴ is a function of the parameters of the
system and the behaviour of the target. An attempt is made to
determine these errors. For the purpose of analysis it is assumed
that: 1) the signal-to-noise ratio at the input of the detector
is constant for each group of signals; 2) the tracking is
carried out in the horizontal plane; 3) the duration of the
distance and azimuth selector pulses is such that the system will
not lose its target at a given noise level; 4) the gain of the
antenna is constant in bearing; 5) the time interval between
individual groups of the reflected signals and the number of
pulses in a group are independent of the behaviour of the target;
6) a linear detector is employed and 7) the threshold and the

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Accuracy of the Automatic Determination of the Coordinates
by an All-round Scanning System

signal-to-noise ratio are such that the probability of the appearance of a spurious signal during one repetition period is negligible as compared with the probability of detection. The following probability functions are considered: p - the probability of the signal exceeding a threshold z , where $z = U_z/\sigma$ (ratio of the threshold voltage to the RMS value of noise); P - the probability of the signal exceeding the threshold during one revolution of the antenna; P_Σ is the probability of the signal exceeding the threshold (in the presence of noise) when the signal is obtained as a result of n -ple interperiodic summation; P_i - the probability of the signal exceeding the threshold during the i -th revolution of the antenna; the tracking error $\bar{\epsilon}$. The functions P and P_Σ are plotted in Figs. 2 and 4, for various values of $s = U_{mc}/\sigma$, where U_{mc} is the amplitude of the signal pulse and σ is the RMS value of noise; n represents the number

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S/142/62/005/002/008/019.
E192/E382

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AUTHOR: Kolomenskiy, Yu.A.

TITLE: Problem of the influence of fluctuation noise on the accuracy of determining the time position of signal pulses

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiotekhnika, v. 5, no. 2, 1962, 216 - 223

TEXT: The mean square value of the random error at the output of one of the time discriminators described by the author and Yu.M. Kazarinov (Izv. vuzov SSSR - Radiotekhnika, v.2, no. 2, 1959, 205) is determined for the case of linear and square detectors. The equivalent circuit of the discriminator is illustrated in Fig. 1a. A signal pulse is applied to the input of the circuit and two keys K_1 and K_2 are closed during the appearance of the first and second selector pulses, which are spaced by time T (Fig. 1). The duration of the selector pulses τ_s is much shorter than the duration of the signal pulse and $RC_1 = RC_2 \ll \tau_s$. Thus, the capacitors C_1 and Card (1/5)

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C_2 become charged to the full amplitude of the signal envelope during the selector pulses; on the other hand, the voltage at the capacitors between the selector pulses is constant. The output voltage is the difference between the potentials of the capacitors C_1 and C_2 . In the case of a linear amplitude-detector the envelope is reproduced without distortion and therefore the distribution law for the perturbing noise appearing with the pulse signal is described by the Rayleigh formula. When the pulse signal and fluctuation noise are applied to the linear detector, the mean amplitude of the signal at the output is reduced and the mean envelope of the signal is distorted. The effect of the noise appears as the time-shift in the position of the received pulses. It is shown that for the linear detector the mean square of the time error at the output of the discriminator is described by:

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$$\overline{\Delta t^2} = \frac{[1 - r(\tau)] \left\{ e^{-2\gamma t^2} + \frac{I_0^2(x) + I_1^2(x)}{2q_0^2 [I_0(x) + I_1(x)]^2} [1 + r(\tau)] \right\}}{4q_0^2 \gamma^2 \tau^2 e^{-\frac{\gamma \tau^2}{2}}} \quad (11)$$

where I_0 and I_1 are Bessel functions of the first kind of the zero and first order, respectively; $q = U_m / \sqrt{2\sigma}$, which is the ratio of the root mean square values of signal and noise at the input of the detector; $r(\tau)$ is the envelope of the correlation coefficient of the fluctuation noise at the input of the detector, $x = q^2/2$, q_0 is the signal/noise ratio at the input of the detector for the maximum signal pulse amplitude, while γ and α are defined by:

$$U_c(t) = U_{mc} \sqrt{\frac{\gamma}{\alpha}} e^{-\gamma t^2}, \quad (4)$$

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which represents the signal as a pulse having a Gaussian envelope. The square root of the error at the output of the discriminator is also evaluated for the square-detector. Comparison of Eq.(11) with the corresponding formula for the square-detector shows that as regards the error the two methods of detection are practically equivalent. However, in square-detection, unlike in the linear case, the average slope of the amplitude characteristic of the time discriminator is independent of the noise level. Eq.(11) and the corresponding formula for the square-detector are valid for any signal-to-noise ratio, any bandwidth of the receiver and an arbitrary spacing between the selector pulses. There are 2 figures.

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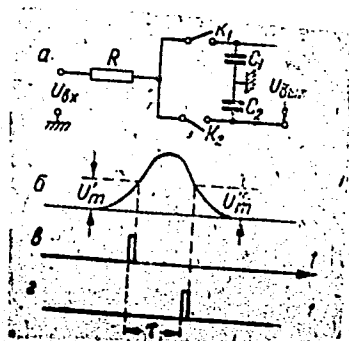
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ASSOCIATION: Kafedra radiopriborov Leningradskogo elektrotekhnicheskogo instituta im. V.I. Ul'yanova (Lenina) (Department of Radio Instruments of Leningrad Electrotechnical Institute im. V.I. Ul'yanov (Lenin))

SUBMITTED: March 15, 1960

Fig. 1:



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Problem concerning the effect of fluctuation noises on the accuracy of the determination of position in time of signal pulses. Izv. vys. ucheb. zav.; radiotekh. 5 no.2:216-223 Mr-Apr '62. (MIRA 15:7)

1. Rekomendovana kafedroy radiopriborov Leningradskogo elektrotekhnicheskogo instituta imeni V.I.Ul'yanova (Lenina).
(Radar)

VASIL'YEVA, Valentina Petrovna; GORSKIY, Aleksandr Ivanovich;
KAZARINOV, Yuriy Mikhaylovich; KOLOMENSKIY, Yuriy
Aleksandrovich; KRAYCHIK, Aron Borisovich; KUDRYAVTSEV,
Dmitriy Vasil'yevich; MARMUZOV, Grigoriy Vasil'yevich;
PESTOV, Yuriy Konstantinovich; TOLOKONNIKOV, Sergey
Vasil'yevich; TOLSTYAKOV, Vladimir Sergeyevich;
ZHEREBTSOV, I.P., red.; SOBOLEVA, Ye.M., tekhn. red.

[Design of radio pulse system components] Raschet elementov
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i dr. Pod red. I.U.M. Kazarinova. Moskva, Gosenergoizdat,
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13 no.6:11-12 Je '58. (MIRA 11:5)

1. Benderskiy konservnyy zavod.
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KOLODZHENKO, Ya.P.

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functional states of the spinal reflex arc. Nerv. sist.
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1. laboratoriya fiziologii nervnoy sistemy Fiziologicheskogo
instituta imeni Ukhtomskogo Leningradskogo gosudarstvennogo
universiteta.

KOLOMEYCHUK, D., master proizvodstvennogo obucheniya

Let's revise the curricula. Prof.-tekh.obr. 19 no.1:18 Ja '62.
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1. Zheleznodorozhnoye tekhnicheskoye uchilishche No.10, L'vov.
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Serum transaminases in late pregnancy toxemias. Vop. med. khim.
10 no.5:466-468 S-O '64. (MIRA 18:11)

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Luganskogo gosudarstvennogo meditsinskogo instituta.

KOLOMEYCHUK, L.V.

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i gin. 40 no.5:69-72 S-0 '64. (MIRA 18:5)

1. Kafedra akusherstva i ginekologii (zav. - prof. M.D.Ovchinnikov)
Luganskogo meditsinskogo instituta.

KOLOMEYCHUK, V., inzh.

Savings in labor and paper. Mest.prom.i khud.promys. 4 no.2:28
F '63. (MIRA 16:2)

KOLOMEYCHUK, V.I., agronom po zashchite rasteniy (g. Zhmerinka,
Vinnitskoy oblasti); SOBOL', G.Ye.; BOYKO, P.P.

Is it necessary to fumigate slightly infected pea seeds?
Zashch. rast. ot vred. i bol. 7 no.7:14-15 JI '62. (MIRA 15:11)

1. Zaveduyushchiy entomologicheskoy laboratoriyey
Belotserkovskoy opytno-seleksionnoy stantsii (for Sobol').
2. Starshiy agronom Ternopol'skoy karantinnoy inspeksii
(for Boyko).

(Peas--Diseases and pests)
(Fumigation)

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3,1800

AUTHORS: Kolomeyeta, Ye.V., Sergeyeva, G.A., and Tarasova, K.F.

TITLE: A study of cosmic-ray intensity, the earth's magnetic field and auroras during the magnetic storm of March 25, 1958

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 4, 1962, 14, abstract 4G76 (V sb. Kosmicheskiye luchy, no. 4, M., AN SSSR, 1961, 35-48)

TEXT: Data obtained by the world station network (72 instruments) were used to analyze variations in the intensity of the hard and neutron components of cosmic rays during the geomagnetic storm of March 25, 1958. Moreover, use was made of data on auroras and geomagnetic disturbances at various latitudes. It is shown that the reduction in the cosmic-ray intensity during the Forbush effect was simultaneous at all stations. The latitude dependence of the amplitude of the Forbush effect is obtained and is used to determine the differential energy spectrum of variations in primary cosmic rays, which is of the form $\delta D(\epsilon)/D(\epsilon) \sim \epsilon^{-1}$. A longitude dependence of
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the Forbush amplitude was not detected. A small increase in the cosmic-ray intensity, in the brightness of auroras and in the H-component of the geomagnetic field is observed 2.5 - 3 hours prior to the Forbush decrease. [Abstractor's note: Complete translation].

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DUNAYEV, P.F., kand.tekhn.nauk; KOLOMEYETS, A.N.

Calculating joints with a guaranteed tightness taking into consideration
the dispersion of shaft and hole dimensions. Vest.mashinostr.
43 no.4:31-34 Ap '63. (MIRA 16:4)

(Fastenings)